

lings between the turbine and the driven machine. These couplings are contained within the centre bearing housing, and are well lubricated with oil from the bearings, special ducts being provided for the purpose. Fig. 33 shows a coupling of this type designed for a comparatively small power machine closed. The coupling bolts need to be dimensioned to transmit the full torque in shear. Fig. 34 shows four parts of a similar coupling designed for a 10,000-h.p. turbine. The barring gear engages in the teeth that can be seen on the outside of the coupling flanges.

The turbine discs are pressed on to the shaft over bronze rings to avoid any danger of tearing the shaft surface in forcing the discs on or off.

The governor is of the centrifugal type carried on a vertical shaft which is driven by a worm and worm wheel from an extension of the turbine main shaft.

The governor does not actuate the controlling valves directly, but controls



Fig. 33.—Claw-type Flexible
10,000 to 30,000 h.p.
Coupling



Fig. 34.—Claw-type Flexible Coupling to Transmit
10,000 h.p.

a small balanced pilot valve (fig. 35), which in turn controls the supply of oil under pressure of about 50 lb. per square inch gauge to the servo-motor, by means of which the controlling valves are hydraulically operated.

The piston of the servo-motor is attached to the end of the cam-shaft as shown in fig. 35. The movements of the governor are transmitted to a pilot valve through a floating lever, to which the pilot valve spindle is attached. One end of the floating lever is pivoted to the governor lever and the other end to the rack, which engages with a pinion on the servo-motor spindle or cam-shaft. Thus when the governor lever rises or falls the pilot valve is moved up or down, and so admits oil to one side or other of the servo-motor piston. This causes the piston to rotate, which in turn rotates the

cam-shaft and so opens or closes the necessary controlling valves.

When the servo-motor piston rotates, the pinion on the end of the cam-shaft also rotates, and moves the rack up or down. This restores the pilot valve to its original position. Therefore the correct relation between the length of the steam belt and the load conditions is always maintained, and the speed of the turbine kept practically constant and free from hunting.

To attain stability the governor is adjusted to give a small drop in speed with increase in load, this drop being usually 2% per cent between no load and full load.